PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF EXPRESS MAILING UNDER 37 C.F.R. § 1.10

I hereby certify that this correspondence and the documents referred to as enclosed therein are being deposited with the United States Postal Service on February 26, 2002 in an envelope as 'Express Mail Post Office To Addressee' Mailing Label Number EL 474185838 US addressed to BOX, BOARD OF PATENT APPEALS AND INTERFERENCES Commissioner for Patents and Trademarks, Washington, D.C. 20231.

Kenneth Solomon
Type or Print Name

Signature

February 26, 2002
Date

In re application of: Gregory M. Jones, et al :
Serial No.: 09/509,126 : Examining Attorney M. Cygen
Filed: March 22, 2000 :
For: MEASUREMENT AND CONTROL OF : Group Art Unit: 2856
ASPHALTENE AGGLOMERATION IN :
HYDROCARBON LIQUID :

BOX BOARD OF PATENT APPEALS AND INTERFERENCES
Commissioner for Patents and Trademarks
Washington, D.C. 20231

TRANSMITTAL LETTER

Enclosed please find:

1. Answer to Examiner's Reply.

It is believed that no fee is required. However, if this is incorrect and a fee is required, you are hereby authorized to charge any deficiencies or credit any overpayments to Deposit Account 20-0823. A duplicate copy of this letter is enclosed.

Respectfully submitted,

Kenneth Solomon
Reg. No. 31,427
Thompson Coburn LLP
1 USBank Plaza
St. Louis, MO 63101
(314) 727-5188

#14
OKON
3/6/02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF EXPRESS MAILING UNDER 37 C.F.R. § 1.10

I hereby certify that this correspondence and the documents referred to as enclosed therein are being deposited with the United States Postal Service on February 26, 2002 in an envelope as 'Express Mail Post Office To Addressee' Mailing Label Number EL 741855838 US addressed to: BOX BOARD OF PATENT APPEALS AND INTERFERENCES Commissioner for Patents and Trademarks, Washington, D.C. 20231.

RECEIVED
2002 FEB 28 PM 12:39
BOARD OF PATENT APPEALS AND INTERFERENCES

Kenneth Solomon
Type or Print Name

Signature

February 26, 2002
Date

Application of: Gregory M. Jones, et al	**Group Art Unit: 2856**
Serial No.: 09/509,126	**Atty. Docket No.:** 56010-4074
Filed: March 22, 2000	
For: MEASUREMENT AND CONTROL OF ASPHALTENE AGGLOMERATION IN HYDROCARBONLIQUID	**Examiner: M. Cygan**

Board of Patent Appeals and Interferences
Commissioner of Patents and Trademarks
Washington, DC 20231

ANSWER TO EXAMINER'S REPLY

It is believed that Applicant's arguments as set forth in the Appeal Brief withstand the allegations raised in the Examiner's Reply. Therefore, Applicant does not wish to belabor the points already made and will not repeat all the points with respect to each claim and each rejection. Nevertheless, for the sake of illustration, Applicant believes that it is worthwhile to point out the following with respect to the Examiner's comments regarding the rejections of the broadest claims over de Boer in view of the Gopinathan patent.

With respect to the rejection of claims 1-4, 10 and 11 under 35 U.S.C. §103 as obvious over de Boer in view of the Gopinathan patent, the Examiner asserts that de Boer "discloses a method for measuring the agglomerative state of asphaltenes in oil comprising applying to the oil a signal of acoustic energy, thereby scattering part of the energy; detecting the backscattered energy, and determining the agglomerative state of the asphaltenes,"[1] but that "[d]e Boer does not teach a selected frequency range in which the magnitude of the scattered signal is resolved at selected frequencies."[2] Nevertheless, the Examiner asserts, the Gopinathan patent discloses a method "in which the magnitude of the scattered signal is resolved at selected frequencies."[3] Of course, however, the claimed method does **not** resolve the magnitude of the scattered signal at selected frequencies but rather resolves the amplitude versus time data to derive magnitudes at selected frequencies. If the deficiency of de Boer admitted by the Examiner is the failure to disclose resolving amplitude versus time data to derive magnitudes at selected frequencies, it is not seen where such is disclosed by Gopinathan or how Gopinathan teaches or motivates changing anything in the de Boer method to resolve amplitude versus time data to derive magnitudes, let alone magnitudes at selected frequencies. **Moreover**, as pointed out in Applicant's Appeal Brief, de Boer fails to teach much more that is called for in the subject claims. De Boer fails to teach –or suggest—each of the following features that are present in every pending claim:

(a) applying a series of pulses, each of which covers a range of frequencies of acoustic energy.

(b) producing amplitude versus time data.

(c) resolving the amplitude versus time data to obtain magnitude versus frequency data.

---

[1] Examiner's Answer, sentence bridging pages 3 and 4.

[2] Examiner's Answer, p. 4, first sentence of the first full paragraph.

[3] Examiner's Answer, p.4, last sentence of first full paragraph.

(d) averaging the magnitude versus frequency data to produce an average magnitude at each of certain selected frequencies.

(e) determining the agglomerative from that averaging.

Yet, the Examiner has pointed to nothing in the Gopinathan patent or anything else to make up for these deficiencies.

These features that are set forth in the subject claims and that are not found in the cited art are very significant because they define a very different type of analytical process than that disclosed or suggested by de Boer (see, for clarification, the flow charts and schematic diagrams appended to Applicant's Appeal Brief and comparing claim 1 with the method of de Boer). That very different type of analytical process provides several substantial advantages. For example, while de Boer is limited to categorizing particle sizes into a few discrete, pre-selected particle size classes, the method of the present claims allows measurement of any size particles within a wide range. In other words, whereas de Boer requires a preliminary assumption of particle sizes and then assignment of a few classes of particle size (say, for the sake of illustration, particle sizes 5, 10, 15and 20) prior to testing, the method of the present claims does not require such assumptions and particle allotment limitations (thus, continuing the illustration, the present method might measure particle sizes such as 2, 5, 7, 8.5, 11, etc. –whatever it happens to be). Thus, as noted in the subject specification, "[a]n advantage of the present invention over prior art methods is that it provides a method for resolving a particle size distribution into almost any number of discrete particle sizes within the range of particles that are sensed within the selected frequency range." Spec. p.18, lines1-4.

As noted in Applicant's Appeal Brief, the Gopinathan method is, if anything, even more limited than is the de Boer method. Not only is it limited to a few particle size classes, but to creation of large particles and measurement of a very few discrete and widely separated classes of particle sizes. Nothing in the Gopinathan patent betrays any inkling of any way to revise the de Boer method to make it more flexible, let alone to modify the de Boer method to create the particular flexible method defined by the

subject claims which no longer is limited to measurement of a small number of discrete, pre-selected particle sizes.

Nevertheless, the Examiner has asserted that the Gopinathan patent "discloses application of the backscattering analysis method to a standard set of particles, which require no process of making steps. (column 10, lines 18-31)"[4] It is not clear to Applicant what the Examiner means by "no process of making steps," but it is believed that the Examiner here is contending that column 10, lines 18-31 of the Gopinathan patent discloses the application of the Gopinathan method to measure particles that have not been made into larger reactant-coated particles. However, that section of the Gopinathan patent to which the Examiner points does not in fact show such application of the Gopinathan method. Instead, it refers to pre-sweeping the medium prior to enlargement of the particles to provide a background spectrum for calibration purposes. In other words, such pre-sweep is carried out to register any backscattering that occurs from pre-enlarged particles as a **non**-signal – that is, it is doing just the **opposite** of what the Examiner claims it is doing.

And while the Examiner contends that "the references do not teach adaptation for a continuum of particle sizes, such is not claimed,"[5] Applicant's measurement of the continuum of particles is what is able to be accomplished by carrying out the claimed method and that is not able to be carried out by the methods of the cited references. The advantage over the prior art need not be recited in the claim –it need not even be mentioned in the specification – so long as that advantage is achieved by what is claimed. In re Estes, 164 U.S.P.Q. 519,521 (CCPA 1970). Further, although the Examiner claims that "de Boer discloses analysis of crude oil . . . which would inherently contain a continuum of particle sizes,"[6] the point is what is **measured**, not what the medium measured **contains**.

---

[4] Examiner's Answer, p. 7, fifth to third lines from bottom.

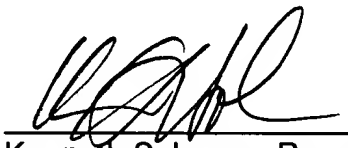
[5] Examiner's Answer, last full sentence of p. 7.

[6] Examiner's Answer, p. 8, first two lines.

The Appeal Brief contains further explanations for patentability and a review thereof is requested. The remaining claims depend from those discussed and so are believed allowable on the same grounds as are the claims discussed above in addition to those grounds discussed previously in the Appeal Brief. Accordingly, reversal of the rejections based on de Boer and the Gopinathan patent are earnestly solicited.

Similarly, it is submitted that the remaining arguments of the Examiner do not withstand scrutiny. It is believed that Applicant's position is satisfactorily set forth in the Appeal Brief. In view of the foregoing, and Applicant's Appeal Brief, reversal of the outstanding rejections is respectfully requested.

Respectfully submitted,



Kenneth Solomon, Reg. #31427
Thompson Coburn LLP
One Firstar Plaza
St. Louis, Missouri 63101
Telephone: 314-552-6297
Fax: 314-552-7297